**DATE OUT:** 04/21/2015

**SUBJECT: PRODUCT CHEMISTRY REVIEW OF:** _____ **TGAI [ ]; MUP [ ]; EUP [X]**
**BARCODE NO.:** 425931 **REG./FILE SYMBOL NO.:** 9150-11
**PRODUCT NAME:** Cryocide 20 **MRID NOS:** 495696-01,-02,-03
**COMPANY NAME:** International Dioxcide, Inc **ACTION CODE:** 676

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**THRU:** Linda Arrington, Branch Chief
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for Linda Arrington
04/23/15

**TO:** Veronica Dutch, CRM
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**INTRODUCTION:**

With this resubmission, in response to our review dated 01/17/2013 (DP # 407623), the registrant provided revised EPA Form 8570-4 (Confidential Statement of Formula), a basic and five alternate formulations, all dated 02/05/2015; EPA Form 8570-35 (Data Matrix), dated 02/05/2015; a label draft, punch dated 02/13/2015; a cover letter (MRID no. 495696-00), dated 02/05/2015; EPA Form 8570-36 (Summary of the physical/chemical properties as per PR Notice 98-1), dated 02/05/2015; and MRID nos. 495696-01,-02,-03. The registrant is requesting reregistration of the product, Cryocide 20, EPA Reg. No. **9150-11**.

**FINDINGS:**

1. EPA Reg. No. **9150-11** is an end-use product containing active ingredients **Chlorine Dioxide**, CAS No. 10049-04-4 and **Didecyl Dimethyl Ammonium Chloride**, CAS No. 7173-51-5 with a label claim nominal concentration of 0.72% and 0.40%, respectively, and other ingredients content of 98.88%. The product is for use as bactericidal and fungicidal mean for wide spectrum of labeling applications. The product is produced by a **non-integrated** system.

2. As requested in Finding no. 2 of the previous review, the deficiencies noted were rectified. However, the CSFs for the basic and five alternate formulations are still unacceptable because the nominal concentration of the active ingredients for alternate suppliers which are currently provided in the Appendices [redacted] does not coincide with that on the label and on the CSFs for basic formulation (0.4% and 0.72% for Didecyl… and Chlorine Dioxide, respectively). These data do not meet PR Notice 91-2.

   Other information is acceptable. The certified limits for the active and inert ingredients are acceptable in accordance with 40 CFR §158.350. All ingredients listed on the CSFs are cleared for use in pesticide formulations.



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**Product ingredient source information may be entitled to confidential treatment**

Note 1: The name of the company shown in Box no. 1 must be corrected to be the same as on the label that is … Dioxcide…, not Dioxide. Typo error is presumed.
Note 2: Chemical name of product EPA Reg. No. [redacted] shown in column no. 10 should not have a comma after Dimethyl. Typo error is presumed.
Note 3: Alternate CAS number (64-17-5) of products EPA Reg. No. [redacted] shown in column no. 10 in all Appendices does not pertain to the product and must be removed.
Note 4: All Appendices must be noted as to what formulation (CSF number) they pertain.
Note 5: [redacted] in formulation nos. 1 and 4 is a mixture of 5 components, not a substance having only a single CAS number as shown in column no. 10. CAS numbers of all components should be provided or none of them with a note 'mixture'.

3. As requested in Finding no. 3 of the previous review, the revised data regarding Product Identity and Composition are provided in MRID no. 495696-01. The requirements of Guideline 830.1550 are now satisfied.

4. As requested in Finding no. 4 of the previous review, the revised data regarding Description of Materials Used to Produce the Product are provided in MRID no. 495696-01. The requirements of Guideline 830.1600 are now satisfied.

5. As requested in Finding no. 5 of the previous review, the revised data regarding Odor are provided in updated Summary of the Physical/Chemical Properties (Form 8570-36). The odor is determined as alcohol-like. The requirements of Guideline 830.6304 are now satisfied.

6. As requested in Finding no. 6 of the previous review, the revised data regarding Oxidation/Reduction: Chemical Incompatibility are provided in updated Summary of the Physical/Chemical Properties (Form 8570-36). The product is determined (by referring to the published literature) as a strong oxidizer. The requirements of Guideline 830.6314 are now satisfied.

7. As requested in Finding no. 7 of the previous review, the data concerning Guidelines 830.6317 (Storage Stability) and 830.6320 (Corrosion Characteristics) are provided in MRID no. 495696-03.

The test was conducted for 2 weeks at 54°C with the subject product in its packaging material. The results over 5 samples are tabulated below.

| Sample # | Mean $ClO_2$, % | | Mean Didecyl…, ppm | |
|---|---|---|---|---|
| | Initial | After 2 weeks | Initial | After 2 weeks |
| 1 | 0.77 | 0.77 | 3925 | 3922 |
| 2 | 0.78 | 0.78 | 3878 | 3944 |
| 3 | 0.78 | 0.76 | 3829 | 3948 |
| 4 | 0.80 | 0.78 | 3913 | 3987 |
| 5 | 0.77 | 0.77 | 3912 | 3877 |
| Average | 0.78 | 0.772 | 3891.4 | 3935.6 |

The assay of the active ingredients did not statistically change over the course of the 2 week accelerated aging study. There were no negative interactions with the container. No signs of leaks or cracking. No signs of gas/pressure build-up (i.e. bulging) – vented bung.

The requirements of Guidelines 830.6317 and 830.6320 are satisfied.

8a. The Ingredients Statement on the draft label is acceptable as per CFR §156.10(g) and PR Notices 91-2, 97-5 and 97-6.

8b. The physical and chemical property of the product shows that product contains oxidizing activity. Thus Physical or Chemical Hazards section must be added to the label as follows: "The product is an oxidizer! Keep away from reducing agents".

8c. The Storage and Disposal Statements are acceptable in accordance with 40 CFR §156.10(i)(2)(ix) and PR Notice 83-3.

NOTE TO PM: The Storage and Disposal Section should be evaluated for compliance with PR Notice 2007-4.

**CONCLUSIONS:**

After submission of revised CSFs (Finding No. 2), the registrant will satisfy the product chemistry requirements for the reregistration of EPA Reg. No. 9150-11.